

a little money, but hardly enough to justify the administrative complications that would be involved. The cost moreover must not be counted without due regard to the credit side. "If," as one commentator has pointed out, "the food, the clothing, the cots, the

nursery accommodation represented by this or that sum are socially desirable—and who doubts that they are?—the millions given to the families is simply facilitating the distribution of the socially desirable goods to the people socially most eligible for them."

THE EFFECT OF THE WAR ON THE BIRTH RATE

By RICHARD M. TITMUSS

THERE have been signs lately of a general awakening to the problems of a declining birth rate, and in particular to these problems as they have been influenced by the war. These subjects, which for long must have seemed the private concern of the *Eugenics Society*, have been discussed in the past months in the editorial and correspondence columns of the press with a sense of urgency that must be welcomed as a sign of the times.

One of the chief contributions to this discussion has been made in a letter to the *British Medical Journal** by Dr. Percy Stocks. In this he attempts to counteract pessimistic views about the future of our population by some reassuring statements about the present. He concludes that "taking all known factors up to the present into consideration, a large fall in our total population is not inevitable unless our future war losses are catastrophic or the war is greatly prolonged, and by wise encouragement, in which the medical profession can play an important part, aided by legislative action it may yet be averted." Dr. Stocks does not essay an analysis of the effects of the war, nor does he offer any new statistics beyond stating that "the adjusted reproduction rate, which allows for a continuing improve-

ment in the death rates of women, was 0.84 in 1938." It should be noted that this figure does not represent the actual net reproduction rate (which, in fact, was distinctly lower), but a hypothetical rate if death rates go the way we all hope they will. Dr. Stocks further suggests that though "the war has, for the time being, reduced the reproduction rate . . . it has also increased the population of young married women to such an unexpected degree as to make possible a very substantial rise in the reproduction rate among women as a whole when the war ceases." This speculation seems to neglect the fact that the increase of marriages in the first period of the war must necessarily have resulted in a depletion of our marriageable stocks; that yesterday's gains must be offset by to-morrow's losses.

The *British Medical Journal's* commentary* on Dr. Stock's letter states that it "advances sound reasons for discounting estimations [showing an inevitable decline in population], and suggests that it is not certain that the population will diminish." Dr. Stocks was in fact more cautious than his editorial interpreter. He said that a *great* fall in population was not inevitable, a very different thing from denying that some fall would take place.

* 1942, 1, 394.

* 1942, 1, 443.

In face of these confusions and misunderstandings a re-examination of the most recent trends in the birth rate may not seem amiss. I will begin by bringing up to date the table included in my paper on "War and the Birth Rate," published in the *EUGENICS REVIEW* of July 1941. The revised table shows the quarterly birth rates in the period 1935-41, expressed as percentages of the average quarterly birth rates in the ten years 1921-30. Thus, in 1935 the birth rate in the March quarter was 78 per cent of the average rate in the March quarters during 1921-30; in the June quarter it was 80 per cent, and so forth.

ENGLAND AND WALES

	1935	1936	1937	1938	1939	1940	1941
March ...	78	78	77	82	80	80	77
June ...	80	81	83	83	83	84	74
September...	83	83	83	83	84	78	77
December ...	81	82	81	81	79	77	82

This table has some interesting aspects. The heaviest fall has occurred in the births registered in the second quarter of the year and next in those registered during the third quarter. The rise in the ratio for the last quarter of 1941 should be noted, as also should the regular course of the ratios up to 1939.

Being composed of ratios and not of absolute rates, the table does not bring out an apparent trend towards a levelling of the seasonal distribution of births. This however is shown below in a table giving the actual quarterly birth rates since 1935.

ENGLAND AND WALES

Live births per 1,000 population

	1935	1936	1937	1938	1939	1940	1941
March	14.6	14.6	14.4	15.3	15.0	15.0	14.4
June	15.4	15.5	16.0	16.0	15.9	16.2	14.2
Sept.	15.2	15.2	15.3	15.2	15.4	14.3	14.1
Dec.	13.8	14.0	13.8	13.8	13.5	13.1	13.9

Unlike the pre-war years when the rates showed a decided preference for the second quarter, followed by the third, first and fourth quarters, we notice that in 1941 there was very little difference in the number of births registered during the four quarters. This change in the seasonal distribution of births suggests that the birth rate of those parents who plan the births of their children to take place during the spring and early

summer has fallen, while the rate for those who do not so plan their families has risen. Another suggestion we may make for the rise in the December ratio from 77 in 1940 to 82 in 1941 is that the organization and conscription of woman-power announced in the early months of 1941 has led to the increased number of births. It should be noted that if only about 9,000 additional women conceived during January/March 1941, this would be sufficient to raise the December birth rate from 13.1 in 1940 to 13.9 in 1941.*

Another factor which may account for the evening out of births over 1941 is the great increase in marriages during the first year of the war. Thus marriages were much heavier than usual in the first and fourth quarters of 1940 and 1941. These facts may well supply the answer, but they still do not upset our point of *less planning* for births to occur during particular months of the year. The Registrar-General tells us that "The intervals between marriage and the first birth, in 1938, show that about 40 per cent of women who married before 20 years of age must have been pregnant before marriage; the proportion was about 30 per cent for those who married at 20, about 20 per cent for those who married at 21, and declined with advancing age at marriage to 8 per cent at 30-34 and 5 per cent at 35-39. . . . Two-thirds of all irregular conceptions not terminated by abortion were regularized by marriage."†

If we suppose that the war, with its 220,000 *additional* marriages up to the end of 1941, has brought to a head an abnormally high number of attachments among *young* couples we should, by applying the 1938 data, expect a rise in the number of births conceived before marriage. If the years 1940 and 1941 have produced a higher than average number of such births (first births be it noted) then the proportion of second and subsequent births must have fallen

* This supposition is supported by the birth rate of 15.3 for the first quarter of 1942 (announced as we go to press). This shows a rise of 0.9 per 1,000 population over the March rate for 1941—roughly, 8,000 additional births.

† Statistical Review for 1938.

much faster than the total figures indicate. In other words, we suggest that the war has produced an unusually high number of first births from young couples—births that may or may not have been planned, but do not appear to have been planned with regard to the most popular months of the year for conceptions to come to term. We suggest, further, that this abnormal number of first births has temporarily cloaked a heavy reduction in second and subsequent births—births which would have been produced by couples married before September 1939 but for the war.

Until these figures are supported by later ones our interpretation is merely speculative. One reason for caution is that there is a time lag between the date of birth and registration. Six weeks are allowed for registration, but even this period may often be exceeded since a registration fee is charged only when a birth is not registered within three months. Hence our suppositions may be upset by this time lag. On the other hand, we may assume that the time lag would operate fairly evenly from year to year. It is extremely unlikely, however, that any great lag has occurred since rationing was introduced, as most parents are anxious to get the child's clothing and food books immediately it is born.

Both tables also bring out the first impact of the war. The first sign of a change in the regularity of the ratios is the September 1940 figure. That the change should occur at this point is interesting because the births taking place during June-September 1940 are those conceived from September-December 1939—the first three months of the war.

Also very important in a survey of the annual changes since 1933 is the number of women in the 19-30 age-group. Since 1933 the birth rate per 1,000 population has developed as follows :

1933	1934	1935	1936	1937	1938	1939	1940	1941
14.4	14.8	14.7	14.8	14.9	15.1	14.9	14.6	14.2

In 1935, when the net reproduction rate was 0.76, the number of women in the age group 19-30 was approximately 4,180,000. By 1939 this figure had fallen steadily by 270,000, whilst the birth rate had risen

steadily up to 1938. This was thus the most favourable year for the recalculation of the net reproduction rate. After 1939, however, the total of women in this age-group rises steadily up to at least 1942. The same divergent trends are evident if we take the 19-40 group—roughly, 60,000 more women in the group in 1942 than in 1938. The reasons for this can be traced back to the last war. The 19-30 group in 1935 were born between 1905 and 1916 (a period of falling birth rates), whilst the same group in 1942 were born between 1912 and 1923 (a period, first, of declining rates followed by a few years of inflated births after the war). Indeed, 210,000 *additional* female live births were registered in 1920 and 1921 as compared with the 1918-19 figures. Another factor not to be ignored is the great increase in marriages since 1938. As compared with 1936-8—years of high marriage rates in contrast with 1931-3—there were over 220,000 *additional* marriages during 1939-41. Yet a further factor is that, in comparison with the averages for the years 1936-8, there was an inexplicable drop of 6,500 in the number of stillbirths during 1940 and 1941.

In the light of these considerations we may venture on a little elementary arithmetic. On the basis of the average births for 1936-8 there were, roughly, 31,000 fewer births during 1940-1. On the same basis there were 6,500 fewer stillbirths. The additional marriages (partly due to the temporarily higher number of women of marriageable age) might have been expected to have produced during 1940-1 something like 60,000 births after allowing for the date of marriage and after applying a fertility rate of 150 births per 1,000 married women. Then we must add a further 4,000 births for the two years 1940-1 which represent the *additional* illegitimate births (many of these will die owing to the high illegitimate infant death rate) which would not have taken place but for the effects of the war. The total resulting from all these rough estimates amounts to 101,500, which many represent the number of unborn casualties during the two years 1940-1. If we remove from the war birth rates as published the influence of these

temporarily favourable factors (more marriageable women, a higher number of married couples, and probably a lower average age at marriage), what is the effect? The answer is a birth rate as low as 13·2 per 1,000 population or 13 per cent below that for 1938 when the adjusted net reproduction rate was 0·84. So close are we to the turning point that, if the favourable elements had not been present, or if the number of births in 1941 had been reduced by less than 10 per cent, the total population of England and Wales would, for the first time in our history, have declined.

In the absence of more detailed official statistics we cannot attempt more elaborate calculations—but broadly speaking, we suggest that there are in the situation we have described no grounds for optimism. In a demographic position favourable to a higher birth rate we find, underneath the surface, a serious and continuous fall in reproduction. Moreover, the loss in unborn casualties to the end of 1941 exceeds by 100 per cent the number of civilians killed by enemy action from the air.

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